CLAIMS

SUB B5

1. A conductive plastic resistance element having particles of conductive material embedded therein and projecting therefrom for contact by the wiper of a potentiometric device in which the resistance element is employed.

2. The resistance element of Claim 1 wherein the conductive material is silver.

3. The resistance element of Claim 1 wherein the conductive material is silver and palladium.

4. The resistance element of Claim 1 wherein the conductive material is selected from the group consisting of silver, palladium, gold, platinum, copper, highly conductive carbon, and combinations thereof.

5. The resistance element of Claim 1 wherein the conductive material is present in an amount equal to about 10 to 20 percent of the resistive element.

6. The resistance element of Claim 1 wherein the conductive material is present in an amount equal to about 2 to 50 percent of the resistive element.

7. A resistance element for use in a potentiometric device having a wiper contact which engages the resistance element, comprising a carbon/plastic matrix with conductive phases for reducing variations in resistance between the wiper contact and the resistance element over the life of the device.

8. The resistance element of Claim 7 wherein the conductive phases consist of silver.

9. The resistance element of Claim 7 wherein the conductive phases consist of silver and palladium.

10. The resistance element of Claim 7 wherein the conductive phases are selected from the group consisting of silver, palladium, gold, platinum, copper, highly conductive carbon, and combinations thereof.

11. The resistance element of Claim 7 wherein the conductive phases are present in an amount equal to about 10 to 20 percent of the resistive element.

12. The resistance element of Claim 7 wherein the conductive phases are present in an amount equal to about 2 to 50 percent of the resistive element.

13. A method of manufacturing a conductive resistance element for use in a potentiometric device, comprising the steps of: processing carbon powder, resin, solvent and conductive phases to form a paste, applying the paste to a substrate, and curing the paste to drive off the solvent and form a film, with the conductive phases rising to the surface of the film and becoming embedded therein.

14. The method of Claim 13 wherein the paste is cured at a temperature on the order of 200°C.

15. The method of Claim 13 wherein the paste is screen printed onto the substrate.

16. The method of Claim 13 wherein the carbon powder, resin, solvent and conductive phases are processed in a high shear mixer.